**IT Applications Unit 3, AOS 2, Organisations and Data Management**

**Structure and role of relational databases, p 101**

**Describe the following relationships in a relational database.**

1. One-to-one relationship
2. One-to-many relationship
3. Many-to-many relationship

**Determining a RDBMS structure**

Need to determine which field in each database will be the primary key

1. What are the roles of foreign keys?

Used to create relationships between tables. Natural relationships exist between tables in most database structures.

**Read the document, Primary keys/ Foreign keys**

1. Describe the characteristics of a foreign key.

Lets you create relationships between tables and stops double-up information.

1. What is meant by referential integrity?

A database concept that ensures that relationships between tables remain consistent. When one table has a foreign key to another, the concept of referential integrity stats that you may not add a record to the table that contains the foreign key unless there is a corresponding record in the linked table.

**Table normalisation**

1. What is the role of table normalisation?

Normalising the tables will normally occur after the breakdown of data required into fields and tables, the normalisation rules are intended to give database designers a tool to ensure that data integrity is maintained.

There are six “normal forms”, each rule applied successively from the first normal form, (1 NF) to the sixth normal form (6NF), although only the first three are used for the majority of databases.

1. Describe the nature of the following three “normal forms”.
   1. First normal form, (1NF) – this rules states that at each field and record intersection (i.e. a ‘cell’) there is only one value, not a list of values.
   2. Second normal form, (2NF) – in situations in which you have more than one primary key field in a table, each non-key field must be fully dependent on the key, not just partly dependent.
   3. Third normal form, (3NF) – To be 3NF compliant, every field in a table must relate directly to the primary key.

**Read the article, normalisation for more explanation of this process.**